1. **Python program Create a numpy array from a list, a tuple with float type.**

```
import numpy as np

# Create a NumPy array from a list with float type
my_list = [1.0, 2.5, 3.7, 4.2]
array_from_list = np.array(my_list, dtype=float)

# Create a NumPy array from a tuple with float type
my_tuple = (1.0, 2.5, 3.7, 4.2)
array_from_tuple = np.array(my_tuple, dtype=float)

print("Array from list:", array_from_list)
print("Array from tuple:", array_from_tuple)
```

2. **Python program to demonstrate slicing, integer, and Boolean array indexing.**

```
import numpy as np


# Create a sample NumPy array
arr = np.array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])
# Slicing: Select a range of elements
slice_result = arr[2:7]  # Elements from index 2 to 6 (7 is exclusive)
print("Slicing result:", slice_result)
# Integer array indexing: Select specific elements by their indices
indexing_result = arr[[1, 3, 5]]  # Elements at indices 1, 3, and 5
print("Integer array indexing result:", indexing_result)
# Boolean array indexing: Select elements based on a Boolean condition
boolean_condition = arr % 2 == 0  # Create a Boolean array indicating even numbers
boolean_indexing_result = arr[boolean_condition]
print("Boolean array indexing result:", boolean_indexing_result)
```

3. **Write a python program to find min, max, sum, the cumulative sum of an array.**

```
import numpy as np

# Create an array of numbers
my_array = np.array([10, 5, 8, 2, 7, 1, 9])

# Find the minimum value in the array
min_value = np.min(my_array)

# Find the maximum value in the array
max_value = np.max(my_array)

# Find the sum of all elements in the array
array_sum = np.sum(my_array)

# Calculate the cumulative sum of the array
cumulative_sum = np.cumsum(my_array)

# Print the results
print("Original Array:", my_array)
print("Minimum Value:", min_value)
print("Maximum Value:", max_value)
print("Sum of Array:", array_sum)
print("Cumulative Sum of Array:", cumulative_sum)
```

4. Write a Python program to demonstrate use of ndim, shape, size, dtype.

```
import numpy as np
# Create a NumPy array
my_array = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

# Get the number of dimensions (ndim) of the array
```

```
num_dimensions = my_array.ndim

# Get the shape of the array
array_shape = my_array.shape

# Get the total number of elements in the array
array_size = my_array.size

# Get the data type (dtype) of the elements in the array
data_type = my_array.dtype

# Print the results
print("Original Array:")
print(my_array)
print("Number of Dimensions (ndim):", num_dimensions)
print("Shape of the Array:", array_shape)
print("Total Number of Elements (size):", array_size)
print("Data Type (dtype):", data_type)
```